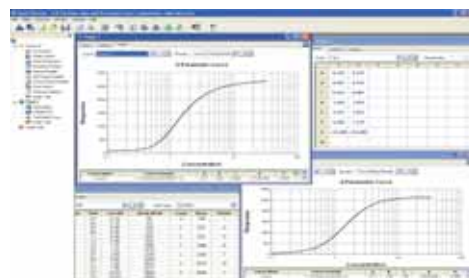


◀ The KnowItAll U academic research and teaching tool from Bio-Rad

✔ Gen5 Microplate Data Analysis Software from BioTek



Knowledge is Power

Omnipotent Software has Arrived

As scientists begin to understand genomic functionality, they must not only acquire reliable information, but they must be able to integrate this information quickly and accurately. Applying powerful computing and software to biological data is the essence of bioinformatics. Here are new products and technology that can help.

Illumina announced the **HumanCNV370-Duo microarray** developed in collaboration with deCODE genetics to target novel regions of the genome that show copy number variation (CNV). Copy number variations can occur when a region within a chromosome or an entire chromosome is randomly amplified or deleted. The DNA copy number of certain genomic regions can vary widely from person to person and has already been linked to cancers, congenital disorders, and other common diseases. Powered by Infinium Assay, also from Illumina, the HumanCNV370-Duo enables researchers to analyze two samples simultaneously and access novel content for detecting disease-relevant CNV regions. The HumanCNV370-Duo combines the content found on the HumanHap300-Duo with an additional 55,000 markers specifically designed to target approximately 11,000 novel copy number variant regions. In addition to providing broad coverage of SNPs from the International HapMap Project, the HumanCNV370-Duo also provides coverage for regions of the human genome believed to contain the majority of undiscovered CNVs. **More information: www.illumina.com**

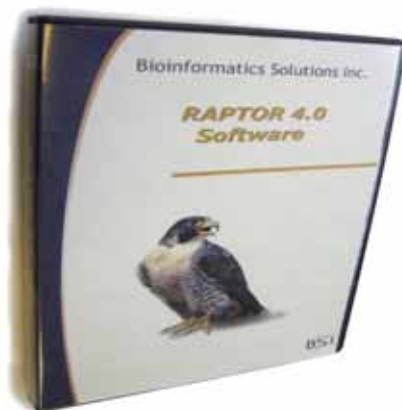
Sequencher, version 4.7, from **Gene Codes**, is a new DNA sequence assembly

and analysis program. Building on previous versions of Sequencher, version 4.7 further refines its DNA sequence analysis capabilities. The Variance Table has been enhanced to allow editing of the data with table cells, with those changes automatically updated to the samples' sequence and chromatograms, simplifying the identification of SNPs and heterozygotes. Additional improvements include fully updated HTML help, the ability to save projects as templates to speed repetitive analysis, and expanded file export capabilities. Version 4.7 also provides enhanced feature handling for working with NIH GenBank. Major enhancements have been made for forensic scientists working with mtDNA samples for victim ID and forensic casework. **More information: www.genecodes.com**

Luminex and **Exiqon A/S**, announced **FlexmiR**, a new line of microRNA products that can provide more than 6,300 data points in just four hours. Developed by Exiqon A/S in collaboration with the Luminex, FlexmiR combines Luminex's flexible xMAP technology and Exiqon's Locked Nucleic Acid (LNA) technology to deliver numerous data with specificity and simplicity in workflow. MicroRNAs may regulate as much as one third of all

genes in the genome and influence a wide range of biological activities and cellular processes. Scientists are finding that various diseases and conditions are associated with specific microRNA patterns, which may lead to the development of targeted treatments, such as gene therapy. "MicroRNA research has great promise, and may be the backbone of many of the most cutting-edge medical therapies of tomorrow. Already microRNAs are of high interest to researchers engaged in the fights against a range of cancers, viral infections, and diseases such as diabetes," said Patrick J. Balthrop, president and chief executive officer of Luminex. The FlexmiR Human and FlexmiR Mouse/Rat panels give researchers the ability to measure the expression of microRNA sequences from the public miRBase database using total RNA samples without the need for RNA size fractionation or amplification. FlexmiR products allow researchers to biotinylate the 3' end of total RNA, followed by a hybridization step where the labeled miRNA hybridizes specifically to LNA capture probes coupled to xMAP microspheres. The detection of the biotinylated miRNA is achieved by the reaction with Streptavidin-Phycoerythrin (SA-PE) and read in a standard 96-well plate

» The Raptor 4.1 protein threading software from Bioinformatics Solutions



on a Luminex analyzer. **More information:** www.luminexcorp.com

Bioinformatics Solutions announced **RAPTOR 4.1** for Linux and Windows, the latest edition of protein threading software. RAPTOR is an innovative software tool designed to predict protein structure from protein sequence. Armed with a unique integer programming algorithm, RAPTOR is capable of discovering remote structural homology for hard sequences and giving high quality prediction. The new version integrates PSI-BLAST, the NCBI software tool for comparing protein sequences, and provides for rapid identification of easy targets. A built in pipeline in RAPTOR 4.1 allows users to automatically run rigorous threading techniques if necessary. **More information:** www.bioinformaticssolutions.com

BioTek Instruments announced **Gen5 Microplate Data Analysis Software, version 1.02**. This latest version provides new data reduction tools, including a 5-parameter logistic fit, several weighting options and curve constraint definition. New curve metrics include 95% confidence intervals, sum of squares and degrees of freedom for more detailed results. Several new experiment and protocol files have been added to the extensive sample files already available in Gen5. Protocols for critical assays such as AlphaScreen cAMP, MycoAlert and IC50 can be opened and modified for rapid analyses with minimal setup. Custom summary results or detailed procedure and data reduction steps may be printed or exported for documentation of experimental parameters. Gen5 v1.02 includes StepWise

tools that enable protocol creation, access and execution from basic to very complicated protocols. Gen5 v1.02 is compatible with the new Windows Vista operating system and available in several editions including Gen5 Secure with features necessary for compliance to 21 CFR Part 11. **More information:** www.biotek.com

Researchers from **IBM** and Wabash College recently deployed **Blue Matter**, a molecular dynamics package written for **IBM Blue Gene** hardware, to investigate the role of polyunsaturated chains in modulating rhodopsin. Rhodopsin belongs to the class of G-protein coupled receptors (GPCR), and is associated with the perception of light. The researchers were able to analyze the results of 26 independent 100-ns simulations of dark-adapted rhodopsin. Blue Gene is an IBM Research project dedicated to exploring the frontiers in supercomputing to advance the understanding of important biological processes. IBM offers access to Blue Gene through the Deep Computing Capacity on Demand (DCCoD) center in Rochester, MN. Scientists can supplement in-house computing capacity with IBM hosted Blue Gene and storage. **More information:** www.ibm.com

Also in the closely related fields of cheminformatics, spectroscopy, and chemometrics, **Bio-Rad** announced the launch of a new spectroscopy reference database and software product, **KnowItAll U**, for academic research and teaching. The new product represents reference data, tools, and technologies that will assist faculty, staff, and students in their scholarly research. A KnowItAll U annual site

"MicroRNA research has great promise, and may be the backbone of many of the most cutting-edge medical therapies of tomorrow."

— Patrick J. Balthrop,
President and chief executive officer,
Luminex

license includes a collection of software tools and over 1.2 million spectra. A new hardware operating system and browser-independent web browser enables access to the KnowItAll U database collection via Windows, Macintosh, or Linux. Bio-Rad's KnowItAll Informatics System is an integrated software and database package that offers tools for database building, management, search, analysis, prediction, structure drawing, and reporting in a single user interface. Bio-Rad offers specialized KnowItAll systems for spectroscopic, chemistry, in silico ADME/Tox, and most recently, metabolomics research. **More information:** www.bio-rad.com ■

Companies Mentioned in this Product Spotlight:
Bioinformatics Solutions: www.bioinformaticssolutions.com
Bio-Rad: www.bio-rad.com
BioTek Instruments: www.biotek.com
Gene Codes: www.genecodes.com
IBM: www.ibm.com
Illumina: www.illumina.com
Luminex: www.luminexcorp.com

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